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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/817,059

04/02/2004

Hongfeng Bi

2662

7590

09/08/2004

Hongfeng Bi  
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EXAMINER

JACKSON, ANDRE K

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/817,059

Applicant(s)

BI, HONGFENG

Examiner

André K. Jackson

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities:

Claim 1 contains more than one period. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy Jr. in view of Brookfield.

Regarding claim 1, Murphy Jr. discloses in the patent entitled "Apparatus and method for measuring viscosity" (a) a rotor which is driven to rotate while contacting with a sample liquid to be measured; (b) means for driving the rotor to rotate; (c) a bob within the rotor; (d) means for directly or indirectly sensing the rotation of the bob (Column 2); (e) means for suspending the bob including: (1) at least two axially disposed sleeves the sleeves do not directly contact with each other and they are arranged so

that at least one of the sleeves is mounted on a stationary frame (96,76), and at least one of the other sleeves directly or indirectly connecting to a portion of the bob, and moves together with the bob (Figure 1). Murphy, Jr. does not disclose one or more leaf springs that hold the sleeves together at least some of the leaf springs have their two ends connected to two different the sleeves. Murphy, Jr. discloses that the sleeves are held together by any conventional means (Column 5, line 21). Therefore, to use a leaf spring would be well within the purview of the skilled artisan. Meanwhile, Brookfield discloses in the patent entitled "Pressurized viscometer" where the sleeves are held together by a spring clip (Column 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Murphy Jr. to include any means from a spring clip to a leaf spring to hold the sleeves together since all of the mentioned are functional equivalents.

Regarding claim 2, Murphy, Jr. discloses where the means for suspending the bob has two coaxial sleeves (96,76).

Regarding claim 3, Murphy, Jr. discloses where the two coaxial sleeves are cylindrical (96,76).

Regarding claim 4, Murphy, Jr. discloses where the two coaxial sleeves have the same outside diameter (70,76).

Regarding claim 5, Murphy, Jr. discloses where the two coaxial sleeves have different outside diameter (Figure 1).

Regarding claim 6, Murphy, Jr. discloses where the two coaxial sleeves have angular displacement relative to each other when a torque is applied on the bob (Column 4).

Regarding claim 8, Murphy, Jr. discloses where a bob shaft is used to connect the bob to the means for suspending the bob (Figure 1).

Regarding claim 9, Murphy, Jr. discloses where the means for suspending the bob is mounted away from the sample liquid so that temperature effects and corrosion damage are minimized (Figure 1).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy, Jr. et al. Brookfield and in further view of Robinson.

Regarding claim 7, Murphy, Jr. does not disclose where the angular displacement is approximately linear corresponding to the torque that applied on the bob. However, Robinson discloses in the patent entitled "Viscometer" where the angular displacement is approximately linear corresponding to the torque that applied on the bob (Claim 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Murphy, Jr. to include where the angular displacement is approximately linear corresponding to the torque that applied on the bob. By adding this feature the apparatus would be able to accurately measure the displacement of the bob.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy, Jr. in view of Brookfield and in further view of Stutz et al.

Regarding claim 10, Murphy, Jr. does not disclose where the means for sensing the rotation of the bob is a pair of concentrically mounted electrical stator and rotor. However, Stutz et al. disclose in the patent entitled "Apparatus for the opto-electrical determination of a measured value" where the means for sensing the rotation of the bob is a pair of concentrically mounted electrical stator and rotor (11,12,20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Murphy, Jr. to include where the means for sensing the rotation of the bob is a pair of concentrically mounted electrical stator and rotor. By adding this feature the apparatus would be able to accurately measure the rotation of the bob.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy, Jr. in view of Brookfield and in further view of Stock.

Regarding claim 11, Murphy, Jr. does not disclose where the means for sensing the rotation of the bob is a strain gauge. However, Stock discloses in the patent entitled "Viscosimeter" where the means for sensing the rotation of the bob is a strain gauge (Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Murphy, Jr. to include where the means for sensing the rotation of the bob is a strain gauge. By adding this feature the apparatus would be able to accurately measure the rotation of the bob.

7. Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (571) 272-2196. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

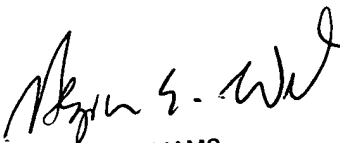
A.J. 

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September 3, 2004

  
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